



**Code: 5516**

Family: Technical Engineering

Service: Operation and Construction

Group: Engineering, Designing, and Structural

Series: Chemical Engineering

---

## **CLASS TITLE: ASSISTANT CHIEF FILTRATION ENGINEER**

### **CHARACTERISTICS OF THE CLASS**

Under direction, functions as second-in-charge, assisting the Chief Filtration Engineer in directing and overseeing the operations, personnel, and administration at one of the City's two water purification plants, and performs related duties as required.

### **ESSENTIAL DUTIES**

- Works directly with area/ unit supervisors and assists the Chief Filtration Engineer in directing professional (i.e. Filtration Engineers) and skilled trades (i.e. Operating Engineers) personnel engaged in the operation, maintenance, and repair of water purification equipment and treatment plants
- Inspects plant operations and makes staffing, equipment, and procedural changes to ensure operational efficiency and effectiveness
- Monitors the sampling and testing of water samples and orders chemical treatment changes and operational changes to maintain water quality standards
- Reviews operational reports and works with staff in determining and prioritizing facility and equipment repair, replacement, and maintenance schedules
- Monitors work in progress and inspects projects completed by private contractors, ensuring maintenance and construction work conforms to contract specifications and the department's quality standards
- Authorizes the ordering of chemicals and supplies and the maintenance of inventories
- Participates in researching and testing new technologies, materials and equipment for use in maintaining, and repairing filtration systems and equipment
- Assists management in preparing technical specifications for the procurement of equipment, materials and supplies
- Directs the maintenance of water purification plant records including the preparation of operational reports to ensure appropriate documentation on water treatment operations
- Reviews laboratory reports on chemical analysis of water samples to evaluate the effectiveness of chemical treatment procedures
- Coordinates the work of Filtration Engineers testing various water treatment techniques and processes and implements improvements and modifications to water purification processes
- Coordinates with Safety Section personnel to implement and monitor safety programs for plant personnel, ensuring appropriate training on safety procedures is provided at regular intervals
- Assists in developing performance standards and evaluating employee and supervisory performance; initiates and enforces disciplinary actions as required
- Keeps abreast of EPA governmental regulations affecting water purification operations
- Performs various administrative functions in support of water treatment plant's operations including preparing operating budgets and monitoring expenditures
- Conducts tours of water purification facilities for visiting engineers and dignitaries
- Provides technical information on water filtration activities at regulatory proceedings

**NOTE:** *The list of essential duties is not intended to be inclusive; there may be other duties that are essential to particular positions within the class.*

## MINIMUM QUALIFICATIONS

### Education, Training, and Experience

- Graduation from an accredited college or university with a Bachelor's degree in Chemical Engineering, Civil Engineering, Mechanical Engineering, Environmental Engineering or a related field of engineering, plus five years of engineering experience in a water treatment facility or on projects relating to water treatment in an operational and/or engineering capacity, of which two years are in a supervisory role related to water treatment processes or engineering projects; or an equivalent combination of education, training and experience provided that the minimum degree requirement is met.

### Licensure, Certification, or Other Qualifications

- A State of Illinois Class "A" Public Water Supply Operator license is required within six months of hire

## WORKING CONDITIONS

- Water treatment plant work environment
- Exposure to outdoor weather conditions

## EQUIPMENT

- Standard office equipment (e.g., telephone, printer, photocopier, fax machine, calculator)
- Computers and peripheral equipment (e.g., personal computer, computer terminals, hand-held computer)
- Personal protective equipment (e.g., hard hat, shoes, glasses, gloves)
- Scientific calculators

## PHYSICAL REQUIREMENTS

- Ability to walk and stand for extended or continuous periods of time
- Ability to climb staircases, ladders, and to access multi-level facilities

## KNOWLEDGE, SKILLS, ABILITIES, AND OTHER WORK REQUIREMENTS

### Knowledge

Comprehensive knowledge of:

- \*water treatment plants and water purification operations
- \*water filtration system maintenance methods
- \*chemical and chemical engineering principles, and procedures
- \* use of filtration plant monitoring and measuring equipment and instruments

Advanced knowledge of:

- \*applicable water treatment and purification theories, principles, and methods

Moderate knowledge of:

- \*management and supervisory methods, practices, and procedures
- \* federal, state and local environmental protection regulations

- inspection, research, and analysis methods and techniques
- safety principles, methods, practices, and procedures
- mechanical system installation and maintenance methods

Knowledge of applicable City and department policies, procedures, rules, and regulations

### **Skills**

- ACTIVE LEARNING - Understand the implications of new information for both current and future problem-solving and decision-making
- ACTIVE LISTENING - Give full attention to what other people are saying, take time to understand the points being made, ask questions as appropriate, and not interrupt at inappropriate times
- CRITICAL THINKING - Use logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems
- MATHEMATICS - Use mathematics to solve problems
- COMPLEX PROBLEM SOLVING - Identify complex problems and review related information to develop and evaluate options and implement solutions
- MANAGEMENT OF MATERIAL RESOURCES - Obtain and see to the appropriate use of equipment, facilities, and materials needed to do certain work
- MANAGEMENT OF PERSONNEL RESOURCES - Motivate, develop, and direct people as they work and identify the best people for the job
- JUDGEMENT AND DECISION MAKING - Consider the relative costs and benefits of potential actions to choose the most appropriate one
- SYSTEMS EVALUATION - Identify measures or indicators of system performance and the actions needed to improve or correct performance relative to the goals of the system

### **Abilities**

- COMPREHEND ORAL INFORMATION - Listen to and understand information and ideas presented through spoken words and sentences
- SPEAK - Communicate information and ideas in speaking so others will understand
- COMPREHEND WRITTEN INFORMATION - Read and understand information and ideas presented in writing
- WRITE - Communicate information and ideas in writing so others will understand
- REASON TO SOLVE PROBLEMS - Apply general rules to specific problems to produce answers that make sense
- REACH CONCLUSIONS - Combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events)

### **Other Work Requirements**

- PERSISTENCE - Persist in the face of obstacles on the job
- INITIATIVE - Demonstrate willingness to take on job challenges
- LEADERSHIP - Demonstrate willingness to lead, take charge, and offer opinions and direction
- DEPENDABILITY - Demonstrate reliability, responsibility, and dependability and fulfill obligations

**CLASS TITLE: ASSISTANT CHIEF FILTRATION ENGINEER**

---

- **INNOVATION** - Think creatively about alternatives to come up with new ideas for and answers to work-related problems
  - **ANALYTICAL THINKING** - Analyze information and using logic to address work or job issues and problems
- 

All employees of the City of Chicago must demonstrate commitment to and compliance with applicable state and federal laws, and City ordinances and rules; the City's Ethics standards; and other City policies and procedures.

The City of Chicago will consider equivalent foreign degrees, accreditations, and credentials in evaluating qualifications.

\* May be required at entry.

---

City of Chicago  
Department of Human Resources  
January, 2012